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AUTOMOBILE COMPUTER CONTROL SYSTEM FOR LIMITING THE USAGE OF WIRELESS TELEPHONES ON MOVING AUTOMOBILES

TECHNICAL FIELD

The present invention relates to the use of wireless telephones and, particularly, to limiting such use under circumstances presenting safety hazards.

BACKGROUND OF RELATED ART

With the globalization of business, industry and trade wherein transactions and activities within these fields have been changing from localized organizations to diverse transactions over the face of the world, the telecommunication industries have, accordingly, been expanding rapidly. Wireless telephones and, particularly, cellular telephones have become so pervasive that their world wide number is fast approaching one hundred million or more. While the embodiment to be subsequently described relates to cellular telephones, the principles of the invention would be applicable to any wireless personal communication device which could be used to communicate from the inside of an automobile. These would include the wide variety of currently available communicating personal palm devices or Personal Digital Assistants (PDAs), which include, for example, Microsoft's WinCE line; the PalmPilot line produced by 3Com Corp.; and IBM's WorkPad. These devices are comprehensively described in the text, *Palm III & PalmPilot*, Jeff Carlson, Peachpit Press, 1998.

Unfortunately, the use of wireless telephones by drivers of automobiles have been related to an increasing number of automobile accidents. The cellular phone not only requires the use of one or even both of the driver's hands, but also diverts the driver's attention from driving. The problem has become so pronounced that many states and countries have enacted, or are considering the enactment, of legislation banning the use of cell phones by drivers in moving vehicles. Such legislation has been opposed by many who regard it as too intrusive on drivers, as well as too difficult to enforce. However, the problem may be expected to become more pronounced along with the progress of the philosophy of the mobile office where the worker is available "24 hours a day—seven days a week".

Consequently, the wireless telephone, as well as the automotive, industries are seeking solutions to these problems for drivers.

SUMMARY OF THE PRESENT INVENTION

The present invention offers a solution to the problem of cell phone use during driving. The solution will require the involvement of legislation or voluntary action by the handheld wireless phone industry to put a sensing means into the wireless telephone which will detect or sense when the telephone is on or in operation, and then provide a sensor which will respond to a wireless turnoff signal sent by the computer control system of the automobile.

Accordingly, the present invention provides an automobile computer control system for limiting the usage of wireless telephones in moving automobiles comprising: wireless means for sensing when the velocity of the automobile exceeds a predetermined velocity; means for sensing when said wireless telephone is in use by the driver of said automobile; and means responsive to both of said sensing means for limiting said use of said wireless telephone by

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said driver of said automobile when the velocity of the said automobile exceeds said predetermined velocity. For the best safety, the predetermined velocity is any moving velocity. Also, the wireless means for sensing when the velocity of the automobile exceeds a predetermined velocity may be carried out by simple infrared means, which will be described in greater detail hereinafter.

More particularly, the present invention may involve an automobile computer control system for limiting the usage of wireless telephones in moving automobiles comprising: means in said automobile for emitting a signal towards the driver of the automobile when the velocity of the automobile exceeds a predetermined velocity; means on the wireless telephone for sensing said emitted signal when said wireless telephone is in use by the driver of said automobile; and means responsive to said sensing means for limiting said use of said wireless telephone by said driver of said automobile upon the sensing of said emitted signal. As previously stated, the emitted signal is preferably an infrared signal and, particularly, a narrow beam infrared signal directed towards the driver. In this way, the narrow beam signal is sensed only if said cellular telephone is being used by the driver of said automobile. The means for limiting the use of said wireless telephone may turn off the wireless telephone when the velocity of the automobile exceeds the predetermined velocity; or there may be further included means for notifying the driver that the wireless telephone will be turned off after a brief time period after said sensing that the velocity of the automobile has exceeded said predetermined velocity together with means for delaying the turning off of said wireless telephone for that brief time period.

In accordance with an alternative aspect of the invention, the means for limiting the use of said wireless telephone when the velocity of said automobile exceeds said predetermined velocity, includes means for notifying the service provider of said wireless telephone, whereby said service provider may charge higher rates when said velocity exceeds said predetermined velocity. The means for notifying said service provider may also include means for transmitting, along with the voice data during the driver's use of said wireless telephone, additional data indicating that said velocity exceeds said predetermined velocity.

In accordance with another aspect of the present invention, there may be means permitting the receiving of an incoming telephone transmission on said turned off wireless telephone briefly and means for turning off said incoming transmission after a brief predetermined time period.

Finally, so that emergencies may be handled, there may be means for storing a set of emergency telephone numbers, as well as a means for enabling said turned off wireless telephone to call any one of said set of emergency telephone numbers.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be better understood and its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawings, in conjunction with the accompanying specification, in which:

FIG. 1 is a partial breakaway diagrammatic side view of a portion of an automobile arranged so as to illustrate the operation of the invention;

FIG. 2 is a partial top view of the arrangement of FIG. 1 from inside of the automobile;

FIG. 3 is a diagrammatic illustration of a cell phone operation used in the embodiment of the invention;